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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,086

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EXAMINER

BADR, HAMID R

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

03/18/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/581,086	Applicant(s) KATO ET AL.	
	Examiner HAMID R. BADR	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicants' amendment filed 12/16/2009 is acknowledged.

Claims 1-10 are being considered on the merits.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The phrase "encrusting machine" is not supported by the specification as originally filed.

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 9 is indefinite for "then the Rhizopus mold inoculated sprouted brown rice and Rhizopus mold-inoculated soybean layers upside down". It is not clear what is meant by this phrase.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hachmeister et al. (1993, Tempeh: A mold modified indigenous fermented food made from soybeans and/or cereal grains; hereinafter R1)

6. R1 discloses the full process of making tempeh using soybeans fermented by *Rhizopus oligosporous*. R1 discloses the traditional tempeh fermentation using soybeans (page 143, Fig. 2 Flow diagram for homemade tempeh and Fig. 3 Flow diagram for small factory production of tempeh). The type of mold, and incubation temperature and other preparation steps are fully disclosed.

7. R1 gives full account of industrial production of tempeh (page 145 to page 150).

8. R1 discloses that the *Rhizopus* strain used for tempeh production should have high lipolytic and proteolytic activities. (page 148, Col. 1, third paragraph). It is also noted that the *Rhizopus* species used in the examples of the instant specification (*R. oligosporous*) has high lipolytic and proteolytic activities while the amylase activity is absent or at least minimal in this organism.

9. R1 also gives details of the cereal grain tempeh stating that the steps involved in the production of tempeh-like products using cereal grains as substrates are very similar to those outlined for the soybean tempeh processing. Rice soybean tempeh is one the

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cereal grain tempehs. R1 discloses that in order to prepare the substrate for fermentation, soybeans must be dehulled and wheat must be cracked and that proper preparation of the substrate allows the mold to reach the nutrients in the cotyledons. (page 172, col. 1, Background information).

10. R1 discloses that it has been found the tempeh produced from whole grains lacked integrity and was not fit for slicing. It is obvious that slightly modifying the surface of the grain via cracking, slicing or splitting is essential for good growth of the mold. Given that modification of the whole grain for better mold growth is disclosed by R1, and noting that sprouting (germination) will activate the amylolytic enzymes in rice grain resulting in the availability of sugars for a better growth, then using sprouted rice as presently claimed would be obvious. The sprouted (germinated) grain would have the amylase system activated resulting in more available sugars for the proliferation of the Rhizopus mold which is not usually an amylase producer. It would be also obvious to use brown rice for the color and nutrients it will impart to the finished product which will be an added advantage.

11. R1 states that it has been reported that soybean and rice had amino acid patterns that complement each other; therefore combination and fermentation of these two substances resulted in a tempeh with a substantially increased protein quality. (page 176; Col. 1, bottom of the text under the Table).

12. R1 discloses that in wheat tempeh production, a ratio of 3 parts soybeans to 1 part wheat or combination of 3 part wheat to 1 part soybeans yielded a very acceptable

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product. (page 172, col. 2, paragraph 4) Therefore, the ratios of rice to soybeans, as presently claimed, could have been determined by an artisan.

13. The arrangement of layers of soybeans/rice as presently claimed would be obvious to an artisan. It would also be obvious to expose different layers of substrates to air for a more uniform growth of tempeh mold.

14. Since all aspects of either soybean tempeh or soybean/grain tempeh were known at the time the invention was made, a person of skill in art would have followed the teachings of R1 to prepare a soybean/brown rice tempeh. As disclosed by R1, this combination would have yielded a product of higher protein quality. Absent any evidence and based on the teachings of the cited reference, there would be a reasonable expectation of success in making the mixed soybean/brown rice tempeh.

Response to Arguments

Applicants arguments have been thoroughly reviewed. These arguments are not persuasive for the following reasons.

1. Applicants argue that cracking, slicing, and splitting as disclosed in R1 is a physical treatment whereas sprouting is a biological treatment.

a. The Examiner agrees that cracking or splitting is a physical treatment and sprouting is a biological treatment. However, R1 discloses that cracking, slicing or splitting of the grain is done in order for the mold to have a better access to the inner sections of the grains for a better growth. Therefore, since a better (more complete) growth is a prerequisite for a better product, other treatments such as sprouting (though

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biological) which makes more sugars available to the mold (e.g. a mold lacking amylase activity) would be a logical approach and obvious to an artisan.

Therefore, while those processes are different in nature (physical vs. biological), they help the mold to have a more profound growth.

2. Applicants argue that R1 teaches away from using sprouted rice.

a. R1 does not state “ sprouted rice cannot be used” anywhere in that document.

Therefore, it cannot be argued that R1 teaches away from the invention.

3. Applicants argue that cracking would render the rice incapable of sprouting.

a. That is obvious. The Examiner agrees.

3. Applicants argue that if the Examiner is taking official notice of the activation of amylase in sprouted rice, the teaching should be supported.

a. The mold of interest; *Rhizopus oligosporous*, while highly lipolytic and proteolytic lacks the ability to produce amylase. This fact is known in the art. Based on this deficiency of this mold, making more sugars available to the mold through sprouting (germination) grains would be within the skill of the art.

4. Applicants argue that the term brown rice is not due to the color or the rice but rather because it is unmilled.

a. The Examiner agrees that brown rice is called so, at least partly, due to the milling/unmilling process. However, it is also called brown rice partly due to the color of the outer layer of the grain. Brown rice has been also defined as "unpolished rice retaining the yellowish-brown outer layer". Please see

wordnetweb.princeton.edu/perl/webwn.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 3,243,301 discloses a mixed soybean/grain tempeh using *Rhizopus oligosporous*. This document specifically discloses that when the mold does not produce amylolytic enzymes, pretreatment of the grain plays a crucial role. This document also emphasizes that precracking of the cereal grain kernels and a fully hydrated state are required if the mold is to grow extensively.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hamid R Badr
Examiner
Art Unit 1794

/Keith D. Hendricks/

Supervisory Patent Examiner, Art Unit 1794